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ORIGINAL RESEARCH

U.S. REIT banking relationships and syndicated loan pricing

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Abstract
Given bank debt is a critical financing source for real estate investment trusts (REITs), understanding how REIT banking relationships facilitate their borrowing costs becomes crucial. This research focuses on REIT syndicated loan facilities and investigates how banking relationships affect REIT loan pricing over the 1987–2015 period. We find that banking relationships on average lower syndicated loan spreads by at least 13.53 basis points. This reduction in spread for relationship loans versus non-relationship loans holds for the periods before the subprime crisis, during the crisis, and after the crisis. The result indicates that the financial crisis increases the borrowing cost for REITs with banking relationships by 59.36 basis points, while it increases by 95.92 basis points for REITs without banking relationships. We further examine the cost for public debt and the underpricing for season equity offerings (SEOs). During the non-crisis periods, banking relationships help reduce the borrowing cost of public debt by around 34 basis points. In addition, during the crisis period, the degree of SEO underpricing for REITs with prior banking relationships is significantly lowered (13.2%) compared to REITs without banking relationships.

Keywords REITs · Banking relationships · Syndicated loan facilities · Loan pricing · Loan spread · Subprime crisis

JEL Classification G20 · G21 · G31 · G32

1 Introduction

The capital structure of real estate investment trusts (REITs) is different from that of industrial firms because of their unique regulatory environment. Generally, REITs have higher leverage ratios and are forced to access external financing more frequently since REITs pay out most of their earnings as cash dividends. Similar to industrial firms, the capital sources

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Table 1 Total amount of capital raised from different sources by equity REITs

Year	Public Debt		Private Debt (Syndicated Loans)		SEO	
	Total Amount	%	Total Amount	%	Total Amount	%
1989	150	15.77	85	8.94	716	75.29
1990	175	20.47	453	52.98	227	26.55
1991	50	8.12	80	12.99	486	78.90
1992	310	25.10	72	5.83	853	69.07
1993	2348	38.01	555	8.98	3275	53.01
1994	3173	29.46	4105	38.11	3492	32.42
1995	3324	18.31	8344	45.96	6486	35.73
1996	4327	17.67	9945	40.62	10,210	41.70
1997	9785	16.79	23,570	40.44	24,926	42.77
1998	13,941	19.39	39,407	54.80	18,557	25.81
1999	9555	31.69	14,302	47.43	6298	20.89
2000	6045	15.76	30,009	78.22	2313	6.03
2001	8650	34.10	14,122	55.67	2596	10.23
2002	8353	25.70	19,503	60.00	4649	14.30
2003	9958	26.75	17,882	48.03	9389	25.22
2004	16,956	27.11	33,795	54.03	11,794	18.86
2005	15,515	20.51	50,574	66.87	9540	12.61
2006	24,322	30.04	39,346	48.59	17,305	21.37
2007	15,765	26.95	32,499	55.55	10,241	17.50
2008	4343	19.34	9675	43.08	8439	37.58
2009	10,193	25.10	12,252	30.16	18,172	44.74
2010	18,444	36.28	12,019	23.64	20,373	40.08
2011	13,525	15.57	54,436	62.68	18,891	21.75
2012	23,500	24.18	40,456	41.63	33,216	34.18
2013	29,046	24.97	58,700	50.45	28,598	24.58
2014	29,077	27.78	54,212	51.80	21,366	20.42
2015	32,289	32.80	44,293	45.00	21,851	22.20

This table reports the total amount of capital raised from different sources by equity REITs. The sample period is from 1987 to 2015, while NAREIT's capital offering data starts from 1989. *Public Debt* includes long-term notes and mortgage-based securities issued in the public market, with data obtained from the NAREIT capital offering database. *Private Debt* is the syndicated loans borrowed from banks, with data obtained from the DealScan database. *SEO* includes both common stock and preferred stock issuances, with data obtained from the NAREIT capital offering database. The size of each capital source is shown in million dollars

for REITs include equity, public debt, syndicated loans, and mortgages, where over the past two decades the dominant financing source has been syndicated loans. Table 1 shows that syndicated loans for equity REITs increase from $85 million (8.94% of the capital offering) in 1989, to $44.29 billion (45.00% of the capital offering) in 2015. Figure 1 shows this trend by amount and percent of shares from 1989 to 2015. After 1994, we observe that REITs tend to be financed through syndicated loans rather than through public debts or seasoned equity offerings (SEOs). The amount of syndicated loans reaches a peak of

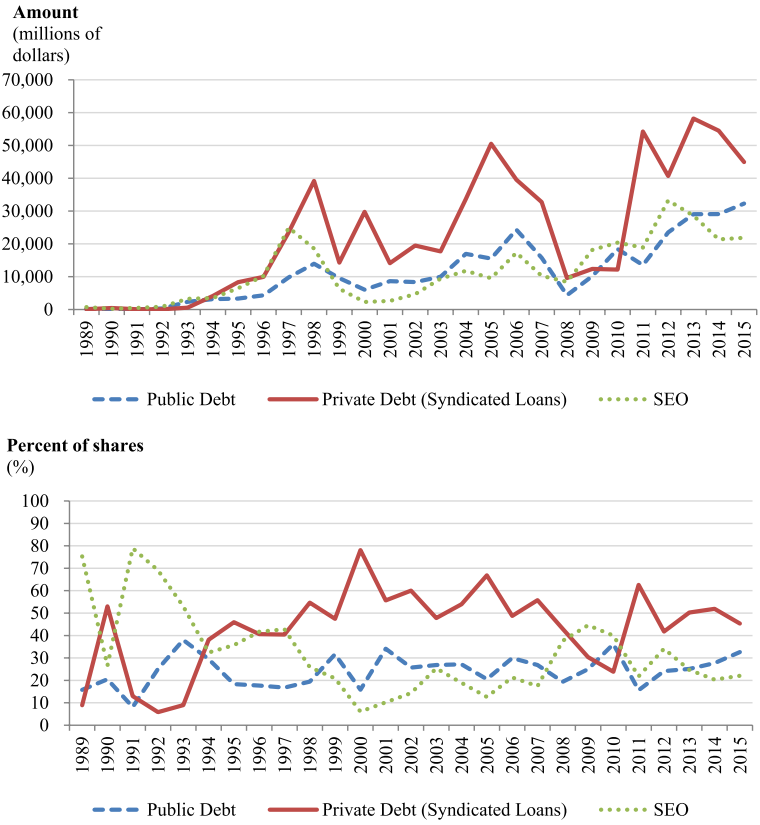


Fig. 1 Total Amount of Capital Raised from Different Sources by Equity REITs. This figure represents the total amount of capital raised from different sources by equity REITs. *Private Debt* is syndicated loans borrowed from banks, with data obtained from the DealScan database. *SEO* includes both common stock and preferred stock issuances, with data obtained from the NAREIT capital offering database. *Public Debt* includes long-term notes and mortgage-based securities issued in the public market, with data obtained from the NAREIT capital offering database. The sample period is from 1987 to 2015, while NAREIT's capital offering data starts from 1989

$58.70 billion in 2013 (50.45% of the capital offering). There are only four years after 1993 (years 1996, 1997, 2009, and 2010) where syndicated loans do not dominate the financing sources in terms of percentage of shares. Despite this increased reliance on syndicated loan financing, there are very few studies on REIT syndicated loans.

A syndicated loan is credit granted by a group of banks to a borrower. In general, a syndicated loan arises when a borrower requires a loan that is so large that a single lender is not able to grant it due to the risk issue or credit line limits. A group of lenders, including at least one lead bank, is in such cases syndicated to offer the loan to the borrower with the same loan conditions. Syndicated loans are quite popular in the European and U.S. markets, and have evolved since the 1990s to become one of the main sources of funding for corporate borrowers.

Previous literature on REIT financing sources largely focuses on public debt and equity offerings (Brown and Riddiough 2003), while few studies are on bank debt. Among the bank debt studies, most focus on REITs' lines of credit. For example, Hardin III et al. (2009) find that there is a negative relationship between cash holdings and lines of credit.

Hardin III and Hill (2011) suggest that lines of credit increase REITs' external liquidity, allowing them to lower their cash holdings to mitigate the agency problem. Hardin III and Wu (2010) show that bank debt is an important financing source for REITs. They find that REITs with banking relationships tend to have lower leverage, less secured debts, and access the public debt market more frequently. Moreover, their empirical results explain why REIT financing has shifted from traditional mortgages to bank debts. While these studies examine how banking relationships affect REIT syndicated loan facility conditions and capital structures, we still do not know how banking relationships affect syndicated loan pricing.

Previous literature suggests that relationships between borrowers and lenders result in favorable loan conditions and help reduce information asymmetry between the loan parties as well as improve a borrower's corporate governance. For example, Bharath et al. (2011) find that borrowing companies that have relationships with their banks have favorable syndicated loan conditions compared to those without banking relationships. They find that banking relationships lower loan spreads by 10–17 basis points, which is valuable for borrowing firms that have low transparency. Alexandre et al. (2014) find that firms with banking relationship before 2008 have lower loan spreads and longer maturity during the financial crisis. Dass and Massa (2011) find that stronger relationships between borrowing companies and banks improve the corporate governance of the borrowing firms. Yildirim (2020) finds that relationship loans reduce the default risks and improve the efficiency of borrowing companies, especially for inefficient and less creditworthy ones. However, the reliance on syndicated loans as a financing source may cause a firm to suffer larger valuation losses and a higher decline in both capital expenditures and profitability during a financial crisis. This is because banks are often required to reduce their lending amounts and ask for higher loan interest rates during such periods (Chava and Purnanandam 2011). From previous literature, whether REITs with banking relationships distinguish themselves from those without banking relationships in terms of borrowing costs during financial crisis periods remains unclear.

This study focuses on REIT syndicated loan facilities and investigates whether REITs with banking relationships have favorable loan conditions compared to those without banking relationships. We also investigate whether the strength of the relationship affects loan conditions. In addition, the subprime crisis that resulted from the bursting of the housing bubble in the U.S. caused significant losses in the REIT industry. This economic shock should affect REIT capital costs. We therefore further investigate how banking relationships affect REIT financing costs before, during, and after the subprime crisis given that past studies show that bank lending activities decreased during the crisis.[1] Lastly, how the offer of a new syndicated loan affects the following cost of capital is also examined.

This research contributes to the literature on how banking relationships impact the spreads of REIT syndicated loans, as banks are an important financing source for growing REITs. We further investigate the effect of financial crises on borrowing costs, which has not been examined before. The results provide insight for REITs to understand the lending behavior of banks and the importance of banking relationship management. Finally, the linkage between a new syndicated loan and the following public financing cost has not

[1] Ivashina and Scharfstein (2010) show that loans to large borrowers during the peak period of the financial crisis (fourth quarter of 2008) was 47% lower than it was the quarter prior to that and 79% lower than at the peak of the credit boom (second quarter of 2007).

previously been investigated. The evidence provides further insight on the cost effect of capital structure management for REITs.

Using REIT syndicated loans from 1987 through 2015, we find that REITs with banking relationships benefit from significantly lower spreads, longer maturities, larger loan amounts, and less collateral requirements. In addition, there are more banks participate in the loans and lead banks retain smaller shares of the loans. We also find that the financial crisis causes the spread to go up significantly but only in the short run. After the financial crisis, the spread level declines but does not go back to the pre-crisis level. This evidence indicates that banks become more conservative after the crisis. More importantly, banking relationships reduce the spread in every period, including that of the financial crisis. Last, we find that the effect of banking relationships on loan spreads is greater for term loans than for credit lines. Furthermore, a new syndicated loan results in lower bond spread and underpricing for REITs with banking relationships.

The literature background is provided in Sect. 2, data collection and methodology are described in Sect. 3, and empirical results are presented in Sect. 4. Finally, we conclude the paper in Sect. 5.

2 Literature

Previous studies on syndicated loans show that greater information asymmetry and moral hazard result in less favorable loan conditions (see Diamond 1984). Sufi (2007) investigates how information asymmetry between lenders and borrowers influences syndicated loan structures and what lenders become syndicate members. He finds that when information asymmetry is severe, lead lenders retain larger loan shares. He further finds that participant lenders that are closer to the borrower, both geographically and in terms of previous lending relationships, are more likely to become syndicate members. These participant lenders are invited to mitigate information asymmetry. Focarellia et al. (2008) find that the announcement of a syndicated loan facility has a positive effect on the borrowers' stock price and that this effect is an increasing function of the share of the loan retained by the arranger. Lead banks tend to increase their share of the loan held to mitigate the agency problem when there is greater information asymmetry between the borrowing company and the lenders.

Bharath et al. (2007) indicate that a borrower with a relationship to a lender has a higher probability of obtaining a loan from the same lender in the future. Bharath et al. (2011) find that borrowing companies with a banking relationship have favorable syndicated loan conditions compared to those without a banking relationship. These conditions include lower spreads, larger loan amounts, and less collateral requirements. This banking relationship is especially valuable when borrowers face a higher degree of information asymmetry and moral hazard among syndicated lenders. Their results also suggest that borrowing companies obtain favorable loan conditions even when they have multiple external financing sources. Zhang et al. (2022) also find that lending relationships facilitates the pricing of syndicated loans in terms of fewer adjustment frequency and shorter syndication time period. Gustafso et al. (2021) directly measure the monitoring of lead lenders in the syndicated loan market and find that more monitoring leads to lower loan spreads and shorter maturity. Chava and Purnanandam (2011) find that borrowing companies who mainly rely on bank loans suffer larger valuation losses during financial crises and experience a higher decline in both capital expenditures and profitability.

Their empirical results further show that financial crises result in a lower quantity of lending and higher loan interest rates in the post-crisis period. However, Schwert (2018) documents different financing behaviors between bank-dependent firms and firms that can access the public debt market. They show that the matching of banks and firms is due to the informational frictions and borrowers' access to outside funding rather than the risk management policy of banks.

Past literature on lines of credit finds a negative relationship between lines of credit and firms' cash holdings. Since REITs have limited cash holdings due to the payout requirement, this finding implies that REITs may tend to increase their lines of credit. Whether this inference applies to REITs is not clear; only a few studies examine lines of credit or syndicated loans within the context of REITs. An example is Hardin III and Wu (2010), who investigate the impact of banking relationships on REIT capital structures. Their sample contains syndicated loans of equity REITs from 1992 through 2003. They collect data on 1,061 bank lines of credit and revolvers, 303 term loans, and 70 other loans and find that REITs with banking relationships have lower leverage and less secured debts. Their results further show how REIT financing has moved from traditional mortgages to bank debts; their focus is on how banking relationships affect REITs' capital structures and their access to the public capital market. However, how banking relationships affect REITs' syndicated loan conditions and whether the impact changes after the subprime crisis remains unknown. The other study on lines of credit is Ooi et al. (2012). They indicate that credit lines protect REITs from firm-level credit quality deterioration and that REITs are more likely to draw down on their credit lines in tight credit markets. They also find that the REIT sector relies more heavily on bank lines of credit as compared to firms operating in other sectors. Their observations evidence the importance of bank debt for REITs, though how the cost of financing is related to banking relationships is still unclear.

This study examines the syndicated loan pricing criteria, and the effect of the subprime crisis on REITs' cost of capital. Dass and Massa (2011) and Bharath et al. (2011) show that relationship loans are better monitored, lead to better corporate governance, have a lower degree of information asymmetry, have lower costs of borrowing, and have better loan conditions. Therefore, we expect that REITs with banking relationships will pay lower costs compared to REITs without banking relationships. In addition, we expect that strong banking relationships should protect REITs from paying extremely high spreads during the financial crisis period. Finally, we expect to observe lower loan interest rates and underpricing after REITs are granted syndicated loans.

3 Data and methodology

To determine the REIT sample, we first collect syndicated loan facility data from the Loan Pricing Corporation's (LPC) DealScan database over the period of 1987 through 2015. The DealScan database contains information about the loans (mainly syndicated loans) of large global borrowing companies. The information includes loan conditions (e.g., spread, maturity, loan amount, and collateral requirements), loan structure (e.g., information on lead banks and participant banks and their shares of the loans), and information about the borrowing and lending companies (e.g., name, industry, and SIC code). There are 316 REITs, 2,125 loan packages, and 4,152 lead bank facility-level observations obtained from DealScan database from 1987 to 2015. Second, financial information is retrieved from

Compustat. We use DealScan-Compustat Linking data provided by Chava and Roberts (2008)[2] to merge the dataset between DealScan and Compustat. The CRSP Ziman database is used to identify equity REITs (SIC code 6798) as our sample. We exclude observations when data on all-in-drawn spreads, loan amounts, or maturities are not available, since they are important regression variables; REITs with a negative book value of total assets are also excluded. Finally, we winsorize the top and the bottom 1% of the observations according to *Spread, Leverage,* and *M/B ratio.* The final sample contains 238 REITs (around 75% of the total data), 1,587 loan packages (around 75% of the total data), and 3,173 lead bank facility-level observations.

Daily stock prices and market values are taken from CRSP. Other available information about SEOs is obtained from SDC, including issue date, offer price, principle amount, and underwriters. Our final sample is matched with offering information obtained from SDC and CRSP through both CUSIP numbers and issuer names. The data on corporate bond offerings, including issue date, coupon rate, maturity, currency, amount issued, and bond price at issue date, is collected from the Bloomberg Terminal. The loan type include U.S. domestic and domestic medium-term notes.

We adopt lead bank facility-level observations related to the REIT syndicated loans since lead banks are more powerful and have larger effects on loan conditions than other participant banks. Relationship loans are expected to have favorable syndicated loan conditions compared to non-relationship loans (Bharath et al. 2011). To examine the impact of prior lending relationships on REIT syndicated loan conditions, we group REIT syndicated loans into those with banking relationships and those without banking relationships according to the following three proxies: *REL(Dummy), REL(Number),* and *REL(Amount).* Following Hardin III and Wu (2010) and Bharath et al. (2011), *REL(Dummy)* receives a value of one if the REIT borrowed from the same lead bank in the preceding 5 years, and zero otherwise. *REL(Number)* and *REL(Amount)* measure banking relationship strength, following both Dahiya et al. (2003) and Bharath et al. (2011). The equations are shown as follows:

$$REL(Number)_{m,i} = \frac{\text{Number of loans by bank } m \text{ to borrower } i \text{ in the preceding 5 years}}{\text{Total number of loans by borrower } i \text{ in the preceding 5 years}} \tag{1}$$

$$REL(Amount)_{m,i} = \frac{\$\text{amount of loans by bank } m \text{ to borrower } i \text{ in the preceding 5 years}}{\text{Total \$ amount of loans by borrower } i \text{ in the preceding 5 years}} \tag{2}$$

where *REL(Number)* measures the number of loans lead bank m has lent to borrower i in the preceding 5 years relative to borrower i's total number of loans, and *REL(Amount)* measures the total size of the loan(s) lead bank m lent to borrower i in the preceding 5 years relative to borrower i's total loan amounts. A higher *REL(Number)* and *REL(Amount)* means a stronger banking relationship.[3]

[2] DealScan-Compustat Link Data is available at Michael R. Roberts website (http://finance.wharton.upenn.edu/~mrrobert/styled-9/styled-12/index.html). We use the latest file in 2018.

[3] For mergers and acquisitions between REITs, we expect that the relationship between acquirers and the bank of the target firm are established through their interactions after the mergers rather than carried forward from the target company. Therefore, we do not consider banking relationships to be carried forward from the mergers.

We apply Bharath et al.'s (2011) syndicated loan model to examine the impact of banking relationships on REIT syndicated loan conditions. We also investigate how spread changes before, during, and after the subprime crisis that caused both REITs and banks to suffer large losses. The equation is as follows.

$$\begin{aligned} Spread_{i,t} = \alpha + \beta_1 REL_{i,t} + \beta_2 Pre - Crisis_{i,t} + \beta_3 Post - Crisis_{i,t} \\ + \beta_4 LoanControl_{i,t} + \beta_5 X_{i,t-1} + \beta_6 LoanPurpose_{i,t} + \varepsilon \end{aligned} \tag{3}$$

where *Spread* denotes the all-in-spread drawn in basis points, and is calculated as the difference between the prime rate or London Inter-bank Offered Rate (LIBOR) and the facility's all-in-drawn loan rate plus annual fees; *REL* denotes the banking relationship, which is either *REL(Dummy)*, *REL(Number)*, or *REL(Amount),* as defined above, or *REL(Number)*^{2} and *REL(Amount)*^{2}*,* which are the squares of *REL(Number)* and *REL(Amount)*, respectively. *Pre-crisis* and *Post-crisis* are dummy variables. When both variables equal zero, the loan year is during the subprime crisis period, i.e., from year 2008 through 2009. When *Pre-crisis* equals one and *Post-crisis* equals zero, the loan year is before the crisis, i.e., from year 1987 through 2007. When *Pre-crisis* equals zero and *Post-crisis* equals one, the loan year is after the crisis, i.e., from year 2010 through 2015. The first coefficient, β_1, measures whether a banking relationship helps reduce the borrowing costs; the second coefficient, β_2, examines whether the spread before the crisis is lower than the spread during the crisis; the third coefficient, β_3, tests whether the spread after the crisis is lower than the spread during the crisis. All three variables are expected to be negative for the following reasons. First, since REITs significantly rely on private loans and are usually highly leveraged, keeping a good banking relationship should lead to reduced REIT financing costs. Second, in the panic of 2008, new lending fell (see Ivashina and Scharfstein 2010) and the economy became more uncertain. We expect that banks thus become more conservative and ask for higher spreads during the crisis. Last, after the crisis, the spread should bounce back, though the level may not be the same as before. *LoanControl* denotes a set of control variables relevant for syndicated loans as follows: *ln*(*Loan amount)* is calculated as the natural log of the total deal amount of a facility in millions of dollars, *ln(Maturity)* is calculated as the natural log of the number of months to maturity from a facility's start, *# of lead banks* measures the number of lead lenders for a facility, and *lead bank shares* measures the percentage of loan amount held by lead banks. *X* refers to a set of REIT specific control variables as follows: *Investment grade* equals one if the S&P long term issuer credit rating is investment grade, and zero otherwise, *FFO/Assets* is the ratio of funds from operations to book value of total assets, *STD(FFO)* is the standard deviation of funds from operations over the preceding 5 years, *M/B ratio* is the ratio of market value of total assets to book value of total assets, *Leverage* measures market leverage calculated as total debts over the sum of total debt and the market value of equity, and *Size* measures the natural log of the book value of total assets.[4] *LoanPurpose* denotes loan purpose fixed effects.

We also investigate how spread changes during the subprime crisis when REITs have banking relationships, since both REITs and banks suffer large losses. The equation is as follows.

[4] We do not use the market capitalization proxy for the *Size* variable to avoid collinearity.

$$Spread_{i,t} = \alpha + \beta_1 REL_{i,t} + \beta_2 Crisis_{i,t} + \beta_3 Crisis_{i,t} \times REL_{i,t} + \beta_4 LoanControl_{i,t} + \beta_5 X_{i,t-1} + \beta_6 LoanPurpose_{i,t} + \varepsilon \quad (4)$$

where *Crisis* is a dummy variable that takes the value of one if the loan year is during the financial crisis period, i.e., year 2008 to 2009, and zero otherwise. *Crisis*×*REL* is the interaction term for REITs with banking relationships and loan years during the crisis. β_1 and $\beta_{1+}\beta_3$ measure whether a banking relationship helps reduce the borrowing costs in the non-crisis and crisis periods, respectively; $\beta_{2+}\beta_3$ and β_2 examine whether the spread during the crisis is higher than the spread during the non-crisis for REITs with and without banking relationships, respectively; β_3 examines whether banking relationships protect REITs from incurring increasing costs and having lower spreads during the crisis. Thus, β_1 and β_3 are expected to be negative, while β_2, and is expected to be positive.

4 Empirical results

4.1 Capital sources of equity REITs

Table 1 and Fig. 1 describe the amount and the percentage of different types of capital sources issued by equity REITs from 1989 through 2015. The capital sources include public debts, syndicated loans, and SEOs. Public debts are long-term notes and mortgage-backed securities issued in the public market, syndicated loans are private debts from banks, and SEOs include common and preferred equity. Both data on public debts and SEOs are collected from the NAREIT Capital Offering database, while data on private debts are obtained from the DealScan database.

We observe that REITs increase their reliance on syndicated loans after 1994. In Table 1, SEOs and public debts make up more than 90% of the capital sources of REITs from 1989 to 1993, except for in 1990; SEOs are the major resource during these years. After this period, we observe a large change in financing for modern REITs. REITs shift to use a larger portion of syndicated bank loans (private debts) for their capital needs. This trend becomes especially prominent from 1998 onward. We further observe that there are large decreases in public debts and syndicated loans for REITs in 2008, where both banks and REITs suffer large valuation losses. After the crisis, REITs change their capital sourcing policies, and rely more on public equity. This is largely because crisis-affected banks tend to charge higher loan interest rates and decrease their lending quantities during post-crisis periods (Chava and Purnanandam 2011). However, syndicated loans dominate the financing sources again after 2011. We observe a pro-cyclicality in syndicated lending. The amount of syndicated lending decreases as credit tightens during the economic downturn of 2001, and the financial crisis of 2008–2009. In addition, the percentages of funding from SEOs and syndicated loans are negatively correlated.

Figure 2 shows the change in banking relationships and in the strength of the banking relationships for each year. We observe an increasing trend that indicates banking relationships become stronger for REL(Dummy) and REL(Number) but not for REL(Amount). This indicates that REITs might tend to keep their relationships with the same banks through borrowing frequency but that they might not want to increase their loan amounts from the banks to avoid the liquidity risk of banks' insufficient funds. Figure 3 shows the

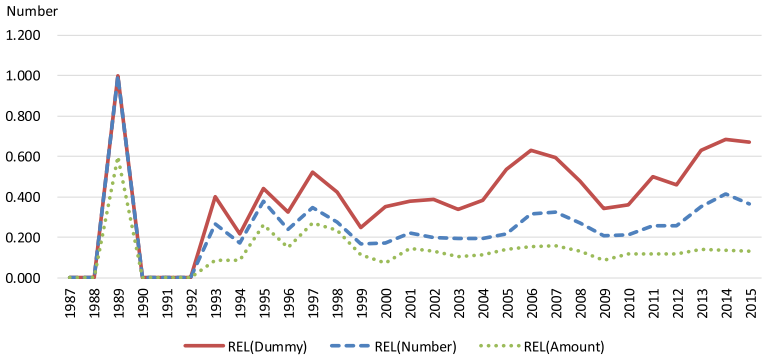


Fig. 2 Banking Relationship Variables of Equity REITs from 1987 to 2015. This figure represents the changes in the average banking relationship variable of equity REITs from 1987 to 2015. For each new syndicated loan, we compute three banking relationship variables: R*EL(Dummy), REL(Number), and REL(Amount)*. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *REL(Number)* is calculated as the number of loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by borrower *i*'s total number of loans in the preceding 5 years. *REL(Amount)* is calculated as the total size of the loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by the total size of borrower *i*'s loans in the preceding 5 years. Syndicated loan data are collected from the DealScan database. The final sample contains 238 REITs, 1,587 loan packages, and 3,173 lead bank facility-level observations. The figure is shown as lead bank-facility level observations

difference in firm characteristics between REITs with and without banking relationship for each year. It indicates that the loan size and maturity increase over time and that for most of the years the loan spread is lower for REITs with banking relationships.[5] The statistical comparison of the loan characteristics is provided in the following 4.3 section. Figure 4 shows that syndicated loans are the main funding source relative to corporate bonds for REITs with and without banking relationships. Figure 5 reports the average amount of capital, which include REIT corporate bond offerings and SEOs, in the years after a new syndicated loan is borrowed. We observe that banking relationships help REITs access the capital market and obtain more corporate bonds and equity compared to REITs without banking relationships.

4.2 Summary statistics

Table 2 provides loan type distributions for the equity REIT syndicated loans over the period 1987 through 2015. The whole syndicated loan market reaches around $44.29 billion in 2015. Of the syndicated loans, credit lines are the major lending type, approaching 54.19% in year 2015, followed by term loans and others.

Table 3 shows the summary statistics. Panel A shows the banking relationships of the sample REITs. The mean of *REL(Dummy)* is 0.504, which implies that 50.40% of the lead bank facility-level observations are relationship loans. Moreover, the means of *REL(Number)* and *REL(Amount)* are 0.284 and 0.138, respectively, implying that REITs

[5] For loan spread, from 2010 to 2012, REITs without banking relationships have lower loan spreads, however the difference is not statistically significant. On the other hand, from 2013 to 2015, REITs with banking relationships have statistically significant lower loan spreads compared to those REITs without banking relationships.

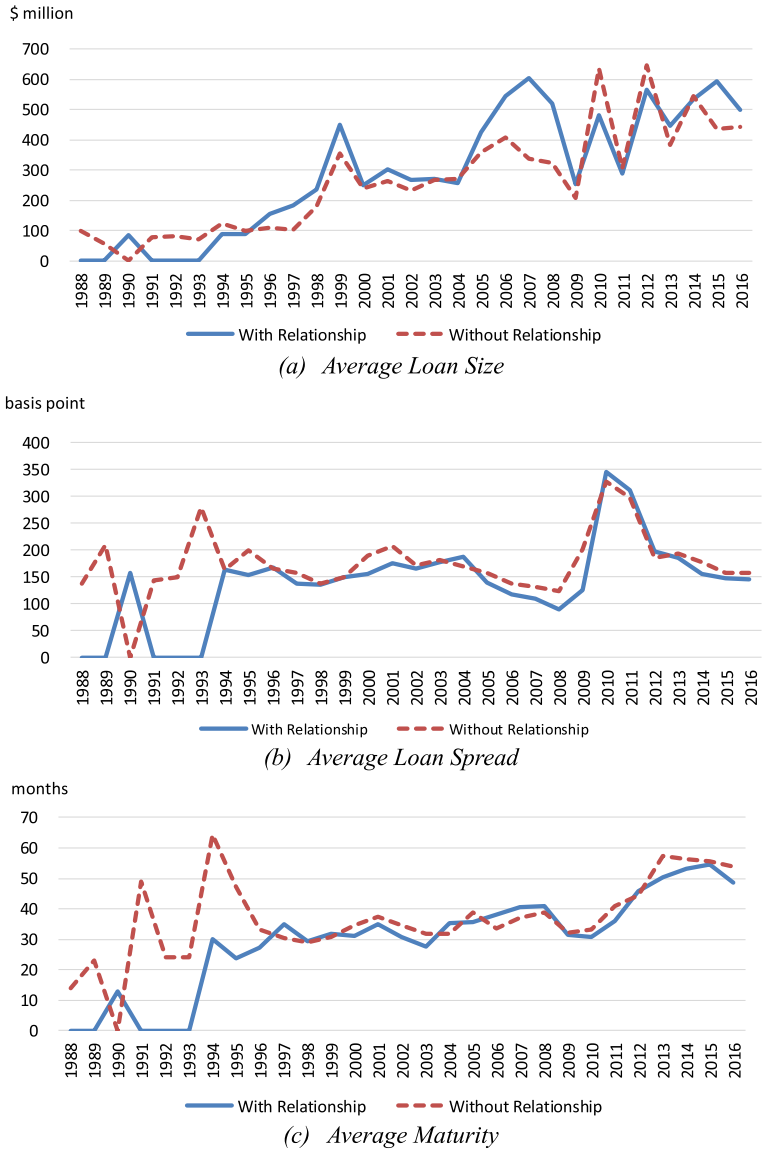
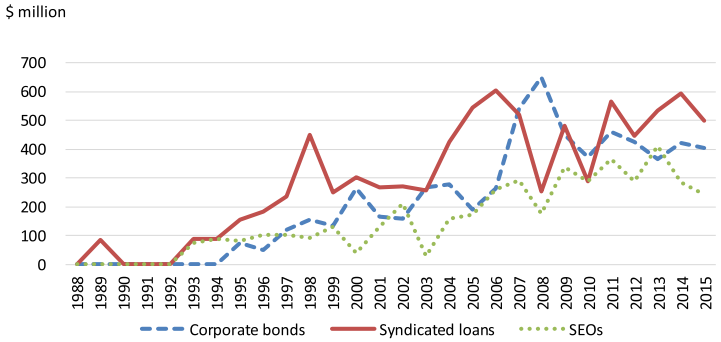
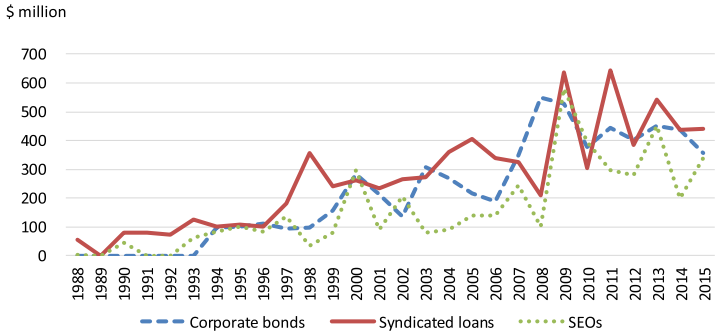


Fig. 3 Average Size, Spread, and Maturity of REIT Syndicated Loans. This figure represents the average size, spread, and maturity of syndicated loans borrowed by equity REITs with or without banking relationships. Syndicated loan data are collected from the DealScan database. The final sample contains 238 REITs, 1,587 loan packages, and 3,173 lead bank facility-level observations. The figure is shown as lead bank-facility level observations. REITs with (without) banking relationships are the REITs that (do not) borrow from the same lead bank in the preceding 5 years



(a) Average Amount of Capital Raised by REITs with Banking Relationships



(b) Average Amount of Capital Raised by REITs without Banking Relationships

Fig. 4 Average Amount of Capital Raised from Different Sources by REITs. This figure reports the average amount of capital REITs raise from different sources. The sample period is between 1988 and 2015. REITs with (without) banking relationships are the REITs that (do not) borrow from the same lead bank in the preceding 5 years. The information on syndicated loans is from the DealScan database. The information on corporate bond offerings is from the Bloomberg Terminal. The information on SEOs is from the SDC Global New Issues database and the CRSP Ziman Real Estate Database

borrow on average 28.40% of their loans and 13.80% of their loan amounts from the same lender in the 5 years prior to the observation loan. In untabulated results, we find that REITs are more likely to borrow from the same lenders compared to industrial firms.[6]

Panel B shows syndicated loan conditions, loan types, loan purposes, and financial covenant types. Loan conditions include price terms, such as spread, and non-price terms. Non-price term conditions include loan amounts, number of lenders, number of lead lenders, lead bank shares, and financial covenants. The mean (median) of the spreads of REIT syndicated loans is 166.840 (150.000) basis points or 1.67% (1.50%). Mean loan amounts and maturities are $412.73 million and 42.64 months, respectively. The lenders

[6] We obtain data on the syndicated loans of industrial firms over the same period, which includes 5,462 borrowing companies, 20,624 loan packages, and 36,059 lead bank facility-level observations. The means of *REL(Dummy)*, *REL(Number)*, and *REL(Amount)* for industrial firms are 0.391, 0.246, and 0.157, respectively.

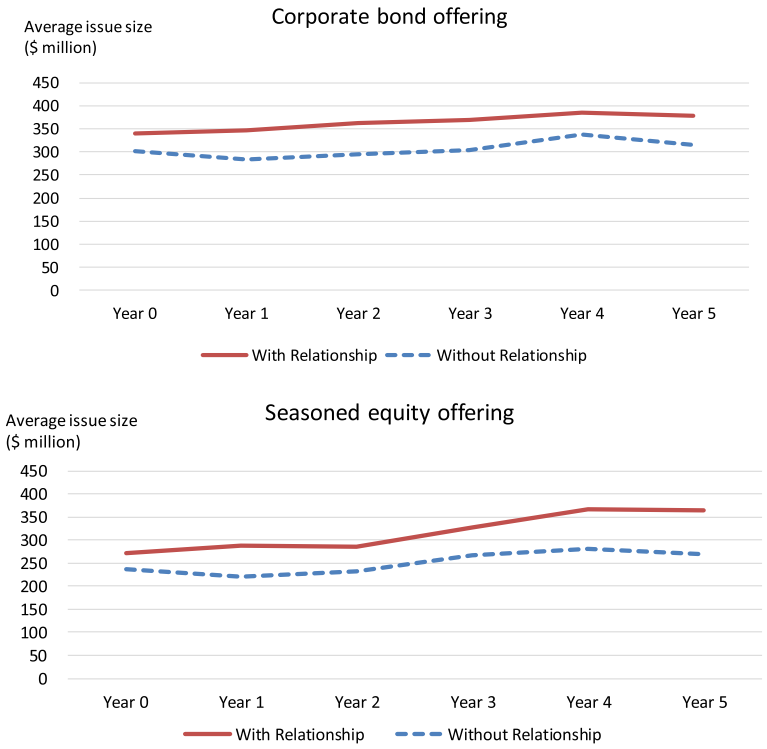


Fig. 5 Average Amount of Capital Raised by REITs in Each Corporate Bond Offering and Each Seasoned Equity Offering in the Years after a New Syndicated Loan Is Borrowed. This figure reports the average amount of capital raised by REITs in each corporate bond offering and each seasoned equity offering (SEO) in the years after a new syndicated loan is borrowed. *Year 0* is the year when a new syndicated loan is borrowed, and thus *Year 1* is one year after the bank loan. REITs with (without) banking relationships are the REITs that (do not) borrow from the same lead bank in the preceding 5 years. The information on syndicated loans is from the DealScan database. The information on corporate bond offerings is from the Bloomberg Terminal. The information on SEOs is from the SDC Global New Issues database and the CRSP Ziman Real Estate Database. The sample period is between 1988 and 2015

require collateral in 36.50% of the loans. The average loan has 10.106 lenders and 2.316 lead lenders. Furthermore, lead banks, on average, retain 43.99% of the loan amount. We also observe that 58.80% of the REITs provide covenants. As for loan types, 60.60% of the loans are revolver and line of credit loans, while 31.30% are term loans. In terms of loan purpose, the most common reasons are corporate (54.30%), working capital (18.60%), and debt repayment (11.00%).

Panel C shows the summary statistics of specific control variables; these variables might be expected to affect the loan pricing. We observe that 43.40% of the REITs are not rated and that 37.60% of the REITs are classified as investment grade by the S&P long term issuer credit rating. The mean of *FFO/MVE* and *FFO/Assets* are 8.90% and 5.60%, respectively. Finally, the mean leverage ratio is 42.30%.

Table 2 Sample distribution of REIT syndicated loans by year

Year	Whole sample	Subsample: Credit Line		Subsample: Term Loans		Subsample: Others	
	Amount	Amount	%	Amount	%	Amount	%
1987	100	100	100.00	0	0.00	0	0.00
1988	169	3	1.65	166	98.35	0	0.00
1989	85	85	100.00	0	0.00	0	0.00
1990	453	390	86.09	33	7.28	30	6.62
1991	80	80	100.00	0	0.00	0	0.00
1992	72	72	100.00	0	0.00	0	0.00
1993	555	505	90.99	0	0.00	50	9.01
1994	4105	2863	69.74	380	9.26	862	21.00
1995	8344	6040	72.39	319	3.82	1985	23.79
1996	9945	7984	80.28	459	4.62	1502	15.10
1997	23,570	18,722	79.43	2324	9.86	2524	10.71
1998	39,407	25,369	64.38	5454	13.84	8585	21.79
1999	14,302	9237	64.58	2808	19.63	2258	15.78
2000	30,009	18,980	63.25	6588	21.95	4441	14.80
2001	14,122	9443	66.87	2604	18.44	2074	14.69
2002	19,503	13,384	68.62	3947	20.24	2173	11.14
2003	17,882	13,691	76.56	2847	15.92	1345	7.52
2004	33,795	18,340	54.27	11,655	34.49	3801	11.25
2005	50,574	31,373	62.03	15,171	30.00	4029	7.97
2006	39,346	26,416	67.14	10,213	25.96	2717	6.91
2007	32,499	23,770	73.14	7936	24.42	793	2.44
2008	9675	2445	25.28	6540	67.59	690	7.13
2009	12,252	11,192	91.34	924	7.54	137	1.11
2010	12,019	9880	82.20	2109	17.55	30	0.25
2011	54,436	47,341	86.97	6405	11.77	691	1.27

Table 2 (continued)

Year	Whole sample	Subsample: Credit Line		Subsample: Term Loans		Subsample: Others	
	Amount	Amount	%	Amount	%	Amount	%
2012	40,456	24,515	60.60	11,871	29.34	4070	10.06
2013	58,700	37,450	63.80	15,230	25.95	6020	10.26
2014	54,212	34,125	62.95	15,367	28.35	4720	8.71
2015	44,293	24,002	54.19	10,068	22.73	10,223	23.08

Table 3 Summary statistics

Variables	Unit	N	Mean	Std	P5	P25	Median	P75	P95
Panel A: Banking Relationship									
REL(Dummy)	Dummy	3173	0.504	0.500	0.000	0.000	1.000	1.000	1.000
REL(Number)	Number	3173	0.284	0.374	0.000	0.000	0.059	0.500	1.000
REL(Amount)	Number	3173	0.138	0.237	0.000	0.000	0.000	0.183	0.667
Panel B: Loan Attribute									
Loan Conditions									
Spread	Basis points	3173	166.840	72.820	75.000	120.000	150.000	200.000	320.000
Loan amount	$ million	3173	412.727	464.657	50.000	125.000	250.000	500.000	1,250.000
Maturity	Months	3173	42.644	18.288	12.000	36.000	39.000	52.000	77.000
Collateral	Dummy	2055	0.365	0.482	0.000	0.000	0.000	1.000	1.000
# of lenders	Number	3173	10.106	7.327	1.000	5.000	9.000	14.000	24.000
# of lead banks	Number	3173	2.316	1.754	1.000	1.000	2.000	3.000	5.000
Lead bank shares	Percent	3165	43.986	32.447	7.925	16.000	33.333	50.000	100.000
Covenants	Dummy	3173	0.588	0.492	0.000	0.000	1.000	1.000	1.000
# of covenants	Number	3173	1.429	1.371	0.000	0.000	2.000	3.000	4.000
Loan Type									
1: Credit Line	Dummy	3173	0.606	0.493	0.000	0.000	1.000	1.000	1.000
2: Term Loan	Dummy	3173	0.313	0.464	0.000	0.000	0.000	1.000	1.000
3: Other	Dummy	3173	0.081	0.272	0.000	0.000	0.000	0.000	1.000
Loan Purpose									
1: Corporate Purpose	Dummy	3173	0.543	0.498	0.000	0.000	1.000	1.000	1.000
2: CP Backup	Dummy	3173	0.004	0.066	0.000	0.000	0.000	0.000	0.000
3: Working Capital	Dummy	3173	0.186	0.389	0.000	0.000	0.000	0.000	1.000
4: Debt Repayment	Dummy	3173	0.110	0.313	0.000	0.000	0.000	0.000	1.000

Table 3 (continued)

Variables	Unit	N	Mean	Std	P5	P25	Median	P75	P95
5: LBO	Dummy	3173	0.002	0.043	0.000	0.000	0.000	0.000	0.000
6: Acquisition Line	Dummy	3173	0.075	0.263	0.000	0.000	0.000	0.000	1.000
7: Takeover	Dummy	3173	0.042	0.200	0.000	0.000	0.000	0.000	0.000
8: Stock Buyback	Dummy	3173	0.001	0.031	0.000	0.000	0.000	0.000	0.000
9: Real Estate	Dummy	3173	0.020	0.140	0.000	0.000	0.000	0.000	0.000
10: Other	Dummy	3173	0.017	0.131	0.000	0.000	0.000	0.000	0.000
Financial covenant types (Package level)									
1. None	Dummy	2517	0.408	0.491	0.000	0.000	0.000	1.000	1.000
2: Max Capex	Dummy	2517	0.006	0.079	0.000	0.000	0.000	0.000	0.000
3. Max Debt to EBITDA	Dummy	2517	0.063	0.243	0.000	0.000	0.000	0.000	1.000
4. Max Debt to Equity	Dummy	2517	0.003	0.053	0.000	0.000	0.000	0.000	0.000
5. Max Debt to Tangible Net Worth	Dummy	2517	0.025	0.155	0.000	0.000	0.000	0.000	0.000
6. Max Leverage Ratio	Dummy	2517	0.309	0.462	0.000	0.000	0.000	1.000	1.000
7. Max Loan to Value	Dummy	2517	0.027	0.162	0.000	0.000	0.000	0.000	0.000
8. Max Senior Leverage	Dummy	2517	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9. Min Debt Service Coverage	Dummy	2517	0.068	0.252	0.000	0.000	0.000	0.000	1.000
10. Min Fixed Charge Coverage	Dummy	2517	0.079	0.270	0.000	0.000	0.000	0.000	1.000

Table 3 (continued)

Variables	Unit	N	Mean	Std	P5	P25	Median	P75	P95
11. Min Interest Coverage	Dummy	2517	0.008	0.091	0.000	0.000	0.000	0.000	0.000
12. Other	Dummy	2517	0.004	0.060	0.000	0.000	0.000	0.000	0.000
Panel C: Firm Characteristic									
Not rated	Dummy	3173	0.434	0.496	0.000	0.000	0.000	1.000	1.000
Investment grade	Dummy	3173	0.376	0.484	0.000	0.000	0.000	1.000	1.000
Size	Number	3173	7.856	1.211	5.884	7.067	7.894	8.633	9.933
FFO/MVE	Number	3169	0.089	0.060	0.035	0.056	0.077	0.104	0.192
FFO/Asset	Number	3169	0.056	0.023	0.023	0.042	0.055	0.068	0.093
STD(FFO)	Number	3160	70.411	116.093	3.792	14.684	32.532	75.700	306.543
M/B ratio	Number	3173	1.338	0.341	0.923	1.114	1.268	1.483	2.052
Leverage	Number	3173	0.423	0.148	0.205	0.323	0.407	0.514	0.686

This table provides summary statistics for the equity REIT syndicated loan conditions over the period 1987 to 2015. Panel A shows the banking relationships for the sample REITs. Panel B shows syndicated loan conditions, loan types, loan purposes, and financial covenant types. Panel C presents the firm level control variables. The final sample contains 238 REITs, 1,587 loan packages, and 3,173 lead bank facility-level observations. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *REL(Number)* is calculated as the number of loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by borrower *i*'s total number of loans in the preceding 5 years. *REL(Amount)* is calculated as the total size of the loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by the total size of borrower *i*'s loans in the preceding 5 years. *Spread* is the all-in-drawn spread over LIBOR in basis points. *Loan amount* is the total deal amount of a facility in millions of dollars. *Maturity* is the number of months to maturity from a facility's start. *Collateral* is a dummy variable that takes a value of one if the company is requested by banks to provide a collateral for the syndicated loan, and zero otherwise. *# of lenders* and *# of lead banks* are number of lenders and number of lead lenders for a facility, respectively. *Lead bank shares* measures the percentage of the loan held by the lead lender(s). *Covenants* is a dummy variable that takes a value of one if at least one of 17 financial covenants are present in a package, and zero otherwise. *# of covenants* is measured as the number of the 17 types of financial covenants that are present in a package (Chava and Roberts, 2008). *Not rated* is a dummy variable that receives the value of one if the borrower REIT is not rated, and zero otherwise. *Investment grade* is a dummy variable that receives the value of one if the borrower REIT's S&P long term issuer credit rating is investment grade, and zero otherwise. *Size* is the natural log of the book value of total assets. *FFO/MVE* is the ratio of funds from operations to market value of equity. *FFO/Asset* is the ratio of funds from operations to book value of total assets. *STD(FFO)* is the standard deviation of funds from operations over the preceding 5 years. *M/B ratio* is the ratio of market value of total assets to book value of total assets. *Leverage* is market leverage calculated as total debts over the sum of total debt and the market value of equity. Syndicated loans and accounting data are collected from the DealScan and Compustat (North America) databases, respectively. *Spread*, *Leverage*, and *M/B ratio* in the top and bottom 1% of all observations are dropped

4.3 REIT banking relationships and loan conditions

We examine loan condition differences between REITs with and without banking relationships in this section. *REL(Dummy)* indicates the existence of a banking relationship while the banking relationship strength is measured by *REL(Number)* and *REL(Amount)*.

Table 4 presents the results of the difference in means tests for syndicated loan conditions based on REIT banking relationships. We show that REITs with banking relationships have significantly lower spreads, larger loan amounts, longer loan maturities, less collateral requirements, a larger number of lenders and lead banks, and lower shares held by lead banks compared to REITs without banking relationships, at the 1% significance level. REITs with banking relationships have favorable loan conditions, where the cost of loans are lower by 21.51 basis points, the loan sizes are larger by $105.70 million, and they are less likely to be required to provide collateral for their loans. In terms of the loan structure, relationship loans tend to have a greater number of lenders and the lead lenders tend to retain a 5.65% lower share of the loans compared to non-relationship loans.

4.4 Effects of REIT banking relationships on loan spreads

Table 5 presents the results from the regression of loan spreads on banking relationships. We show the results for the whole sample as well as separately for the credit line and term loan subsamples, respectively. There are 1,914 credit line loan observations and 990 term loan observations. The coefficients on banking relationship, proxied by *REL(Dummy), REL(Number),* and *REL(Amount),* are all negative for the whole sample as well as for each of the two subsamples. These results support our hypothesis that banking relationships benefit REITs in reducing the borrowing costs for all types of syndicated loans. For the whole sample, on average, REITs with banking relationships pay 13.53 basis points less than REITs without banking relationships. For credit lines and term loans, this number is 11.13 basis points and 15.41 basis points, respectively.

As we expect, the *Pre-crisis* coefficients are negative for the whole sample as well as each of the two subsamples. In addition, the *Post-crisis* coefficients are negative and significant, though relatively smaller, for the whole sample and the credit line subsample. For example, for the whole sample, the coefficient for the pre-crisis period is -103.1, i.e., the pre-crisis period basis point spread is lower compared to the spread during the crisis period, while the coefficient for the post-crisis period is -52.72. This evidence is consistent with the univariate test results[7] and shows that lenders become more careful after an economic shock, though relationship loans still prove to be less expensive.

In addition, for the whole sample, we observe that REITs pay significantly lower spreads when they have investment credit ratings, have higher FFO relative to assets, and have a larger firm size. REITs with higher FFO volatility and higher leverage ratios are riskier and bear higher costs. These findings indicate that banks appreciate cash-rich REITs as well as larger REITs, since large REITs with high cash flows can defend themselves from crises and have the capacity to pay off the debt. On the other hand, REITs with higher leverage

[7] The results of the univariate tests show that strong banking relationship loans have lower spreads compared to non-banking relationship loans during a financial crisis. Having a strong banking relationship not only reduces information asymmetry between lenders and borrowers but also reduces future monitoring costs for lenders. Thus, REITs benefit from strong banking relationships and pay lower loan spreads even during financial crises.

Table 4 Loan characteristic comparison based on banking relationship

	REL(Dummy) = 1		*REL(Dummy)* = 0		Difference	
	N	Mean	N	Mean	Mean	*t* statistics
Spread	1,600	156.20	1,573	177.70	−21.51	−8.40***
Loan amount	1,600	465.10	1,573	359.40	105.70	6.46***
Maturity	1,600	43.51	1,573	41.76	1.76	2.70***
Collateral	1,006	0.32	1,049	0.41	−0.10	−4.58***
# of lenders	1,600	11.00	1,573	9.19	1.81	7.00***
# of lead banks	1,600	2.43	1,573	2.20	0.23	3.65***
Lead bank shares	1,598	41.19	1,567	46.84	−5.65	−4.92***
Covenants	669	0.60	1,848	0.59	0.01	0.43
# of covenants	669	1.44	1,848	1.43	0.00	0.05

This table conducts difference in mean tests for syndicated loan characteristics based on REIT banking relationships over the period 1987 to 2015. The final sample contains 238 REITs, 1,587 loan packages, and 3,173 lead bank facility-level observations. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *Spread* is the all-in-drawn spread over LIBOR in basis points. *Loan amount* is the total deal amount of a facility in millions of dollars. *Maturity* is the number of months to maturity from a facility's start. *Collateral* is a dummy variable that takes a value of one if the company is requested by banks to provide a collateral for the syndicated loan, and zero otherwise. *# of lenders* and *# of lead banks* are number of lenders and number of lead lenders for a facility, respectively. *Lead bank shares* measures the percentage of the loan held by the lead lender(s). *Covenants* is a dummy variable that takes a value of one if at least one of 17 financial covenants are present in a package, and zero otherwise. *# of covenants* is measured as the number of the 17 types of financial covenants that are present in a package (Chava and Roberts, 2008). Syndicated loans and accounting data are collected from the DealScan and Compustat (North America) databases, respectively. *Spread*, *Leverage*, and *M/B ratio* in the top and bottom 1% of all observations are dropped. The *t* statistics are shown in the last column. "***", "**", and "*" represent 1%, 5%, and 10% significance levels, respectively

ratios are not able to obtain lower borrowing costs since they may run out of financial slack.

For the credit line subsample, the results are similar, though larger loan amounts, longer maturities, and higher M/B ratios further help to reduce the spread, while the percentage of FFO to assets does not. This evidence shows that REITs with growth opportunities are expected to have the potential to generate profits and pay back the credit line borrowed in the future. For the term loan subsample, the results are similar to what we observe for the whole sample, with the exception that loan amounts are positively associated with spread while FFO volatility does not affect the spread.

Table 6 tests whether banking relationships during the crisis period further help to reduce loan costs. We find that the results are similar to those in Table 5. During the non-crisis period, REITs with banking relationships pay 8.996 basis points less than REITs without banking relationships. Then, during the crisis period, the spreads for all REITs (i.e., REITs with and without banking relationships) increase by 95.92 basis points, before taking banking relationships into consideration. Banking relationships are found to help REITs reduce this increase in borrowing cost by 36.56 basis points. Thus, taken together, for REITs with banking relationships, the borrowing cost increases by only 59.36 (95.92 minus 36.56) basis points during the crisis period compared.

Table 5 Effects of REIT banking relationships on loan spreads in different periods across different loan types

	Dependent Variable: Spread								
	Whole Sample			Subsample of Credit Line			Subsample of Term Loan		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
REL(Dummy)	−13.53***			−11.13***			−15.41***		
	(−4.38)			(−3.44)			(−3.56)		
REL(Number)		−23.53**			−21.06**			−60.76***	
		(−2.48)			(−2.51)			(−3.06)	
REL(Number)^2		13.55			10.23			56.06**	
		(1.50)			(1.45)			(2.52)	
REL(Amount)			−23.78*			−21.67*			−80.95***
			(−1.84)			(−1.75)			(−2.84)
REL(Amount)^2			19.13			14.96			108.6**
			(1.39)			(1.36)			(2.54)
Pre-crisis	−103.1***	−103.8***	−103.8***	−138.2***	−139.4***	−139.1***	−39.06**	−38.28**	−38.80**
	(−8.02)	(−7.99)	(−8.00)	(−8.01)	(−7.95)	(−7.93)	(−2.24)	(−2.17)	(−2.25)
Post-crisis	−52.72***	−53.73***	−54.41***	−66.47***	−67.50***	−67.78***	−15.18	−15.17	−16.52
	(−4.08)	(−4.09)	(−4.14)	(−3.75)	(−3.74)	(−3.74)	(−0.85)	(−0.83)	(−0.92)
ln(Loan amount)	−2.399	−2.577	−2.709	−9.717**	−9.916**	−10.08**	10.71**	11.45**	11.38**
	(−1.04)	(−1.11)	(−1.15)	(−2.48)	(−2.56)	(−2.57)	(2.04)	(2.15)	(2.14)
ln(Maturity)	−1.198	−1.113	−1.077	−13.09*	−13.22*	−13.45*	8.407*	8.944*	8.957*
	(−0.28)	(−0.26)	(−0.25)	(−1.78)	(−1.80)	(−1.83)	(1.81)	(1.91)	(1.91)
# of lead banks	1.381	1.527	1.536	−1.256	−1.185	−1.195	0.923	1.002	1.041
	(0.46)	(0.50)	(0.50)	(−0.63)	(−0.60)	(−0.59)	(0.23)	(0.25)	(0.26)
Investment grade	−42.77***	−43.15***	−43.35***	−33.63***	−33.86***	−34.06***	−45.85***	−46.09***	−46.30***
	(−7.14)	(−7.11)	(−7.12)	(−6.17)	(−6.18)	(−6.24)	(−5.54)	(−5.59)	(−5.58)
FFO/Asset	−249.0*	−247.9*	−243.7*	−89.10	−89.01	−81.05	−451.2***	−447.7***	−448.3***
	(−1.95)	(−1.94)	(−1.89)	(−0.69)	(−0.69)	(−0.63)	(−3.02)	(−2.99)	(−3.00)

Table 5 (continued)

	Dependent Variable: Spread								
	Whole Sample			Subsample of Credit Line			Subsample of Term Loan		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
STD(FFO)	0.0399**	0.0397**	0.0404**	0.0390**	0.0387**	0.0394**	0.118	0.117	0.116
	(2.11)	(2.12)	(2.11)	(2.09)	(2.13)	(2.13)	(1.50)	(1.49)	(1.46)
M/B ratio	−4.178	−4.254	−4.323	−18.85*	−19.24**	−19.44**	15.82	16.30	17.23
	(−0.39)	(−0.39)	(−0.40)	(−1.93)	(−1.97)	(−1.99)	(1.11)	(1.16)	(1.18)
Leverage	141.4***	141.9***	143.5***	136.6***	135.4***	136.8***	130.7***	135.2***	135.7***
	(6.69)	(6.66)	(6.71)	(5.87)	(5.79)	(5.85)	(3.95)	(4.09)	(4.08)
Size	−9.367***	−9.895***	−10.04***	−6.317*	−6.690*	−6.887*	−20.09***	−21.10***	−20.77***
	(−2.84)	(−2.93)	(−2.95)	(−1.66)	(−1.74)	(−1.78)	(−2.83)	(−2.92)	(−2.91)
Intercept	299.3***	301.4***	300.7***	399.1***	403.7***	404.4***	222.7***	219.2***	215.3***
	(8.95)	(8.82)	(8.77)	(10.86)	(10.86)	(10.93)	(3.50)	(3.41)	(3.32)
Loan purpose fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3157	3157	3157	1914	1914	1914	990	990	990
Adj. R^2	0.377	0.372	0.370	0.467	0.465	0.463	0.323	0.320	0.320
AIC	34,564	34,586	34,598	20,691	20,698	20,706	10,811	10,816	10,816
BIC	34,697	34,725	34,737	20,808	20,820	20,828	10,909	10,919	10,919

$Spread_{i,t} = \alpha + \beta_1 REL_{i,t} + \beta_2 PreCrisis_{i,t} + \beta_3 PostCrisis_{i,t} + \beta_4 LoanControl_{i,t} + \beta_5 X_{i,t-1} + \beta_6 LoanPurpose_{i,t} + \varepsilon$ where *REL* includes *REL(Dummy)*, *REL(Number)*, and *REL(Amount)*, as well as $REL(Number)^2$ and $REL(Amount)^2$, which are the squares of *REL(Number)* and *REL(Amount)*, respectively. *Pre-Crisis* is a dummy variable that takes the value of one if the loan year is from 1987 to 2007, and zero otherwise. *Post-Crisis* is a dummy variable that takes the value of one if the loan year is from 2010 to 2015, and zero otherwise. β_1, β_2, and β_3 are expected to be negative. *LoanControl* denotes the set of control variables relevant for syndicated loans as follows: *ln*(*Loan amount)* calculated as the natural log of the total deal amount of a facility in millions of dollars, the variable *ln(Maturity)* calculated as the natural log of the number of months to maturity from a facility's start, and the variable *# of lead banks,* which measures the number of lead lenders for a facility. *X* refers to REIT specific factors as follows: *Investment grade,* which equals one if the S&P long term issuer credit rating is investment grade, and zero otherwise, *FFO/Assets*, which is the ratio of funds from operations to book value of total assets, *STD(FFO)*, which is the standard deviation of funds from operations over the preceding 5 years, *M/B ratio*, which is the ratio of market value of total assets to book value of total assets, *Leverage*, which measures market leverage calculated as total debts over the sum of total debt and the market value of equity, and *Size*, which measures the natural log of the book value of total assets. *LoanPurpose* denotes loan purpose fixed effects

Table 6 Regression of loan spread on REIT banking relationship

	Dependent Variable: *Spread*								
	Whole Sample			Subsample of Credit Line			Subsample of Term Loan		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
REL(Dummy)	−8.996***			−5.611*			−13.13***		
	(−2.76)			(−1.74)			(−2.96)		
REL(Number)		−13.61			−6.668			−60.47***	
		(−1.28)			(−0.73)			(−3.28)	
$REL(Number)^2$		10.42			5.211			61.14***	
		(1.01)			(0.63)			(2.98)	
REL(Amount)			−11.10			−0.910			−74.81***
			(−0.93)			(−0.08)			(−2.68)
$REL(Amount)^2$			9.766			0.979			105.3**
			(0.80)			(0.12)			(2.43)
Crisis	95.92***	93.08***	87.48***	116.8***	118.3***	108.4***	39.08*	43.44**	38.33*
	(5.88)	(6.50)	(6.26)	(5.55)	(6.63)	(6.18)	(1.94)	(2.29)	(1.87)
REL(Dummy)×*Crisis*	−36.56*			−25.35			−21.59		
	(−1.82)			(−0.92)			(−1.02)		
REL(Number)×*Crisis*		−48.60**			−40.96			−63.92**	
		(−2.46)			(−1.59)			(−2.29)	
REL(Amount)×*Crisis*			−52.84			−4.419			−75.80
			(−1.19)			(−0.10)			(−1.54)
ln(Loan amount)	−2.866	−3.128	−3.068	−8.113*	−8.432*	−8.385*	10.10*	10.53*	10.63*
	(−1.24)	(−1.36)	(−1.28)	(−1.87)	(−1.95)	(−1.90)	(1.84)	(1.91)	(1.91)
ln(Maturity)	6.599	6.747	6.624	4.827	4.701	4.435	11.73**	12.23***	12.01***
	(1.61)	(1.64)	(1.61)	(0.66)	(0.65)	(0.61)	(2.56)	(2.65)	(2.66)
# of lead banks	5.354*	5.505*	5.487*	4.801	4.906	4.953	2.626	2.542	2.611
	(1.83)	(1.86)	(1.84)	(1.37)	(1.40)	(1.39)	(0.70)	(0.68)	(0.69)

Table 6 (continued)

	Dependent Variable: *Spread*								
	Whole Sample			Subsample of Credit Line			Subsample of Term Loan		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Investment grade	−45.68***	−45.74***	−45.83***	−40.67***	−40.62***	−40.54***	−45.83***	−45.99***	−46.06***
	(−8.20)	(−8.15)	(−8.09)	(−6.77)	(−6.76)	(−6.75)	(−5.61)	(−5.66)	(−5.62)
FFO/Asset	−378.6***	−370.5***	−372.7***	−308.8**	−303.1**	−299.7**	−483.8***	−462.8***	−477.1***
	(−3.22)	(−3.12)	(−3.14)	(−2.36)	(−2.30)	(−2.27)	(−3.28)	(−3.18)	(−3.23)
STD(FFO)	0.0239	0.0255	0.0249	0.0251	0.0266	0.0269	0.103	0.109	0.103
	(1.13)	(1.19)	(1.17)	(1.08)	(1.14)	(1.15)	(1.27)	(1.34)	(1.27)
M/B ratio	−3.803	−4.146	−4.259	−15.59	−15.66	−16.04	13.61	14.01	15.10
	(−0.35)	(−0.38)	(−0.39)	(−1.39)	(−1.39)	(−1.43)	(0.98)	(1.04)	(1.09)
Leverage	122.6***	124.0***	124.3***	122.0***	122.2***	122.9***	116.8***	122.4***	121.7***
	(5.91)	(5.95)	(5.94)	(4.96)	(4.99)	(4.99)	(3.77)	(3.96)	(3.94)
Size	−7.058**	−7.456**	−7.674**	−4.454	−4.700	−4.858	−19.51***	−20.27***	−20.06***
	(−2.22)	(−2.32)	(−2.34)	(−1.06)	(−1.12)	(−1.14)	(−2.69)	(−2.77)	(−2.77)
Intercept	191.1***	191.0***	192.3***	217.5***	218.8***	220.0***	193.9***	189.2***	186.8***
	(6.50)	(6.45)	(6.47)	(6.84)	(6.91)	(6.95)	(3.09)	(3.01)	(2.94)
Loan purpose fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3157	3157	3157	1914	1914	1914	990	990	990
Adj. R^2	0.323	0.319	0.317	0.363	0.362	0.359	0.310	0.313	0.311
AIC	34,827	34,842	34,855	21,033	21,036	21,044	10,829	10,827	10,829
BIC	34,960	34,982	34,994	21,150	21,158	21,166	10,927	10,930	10,932

Table 6 (continued)

***Significant at 1%; **significant at 5%; *significant at 10%. T-statistics in parentheses

$Spread_{it} = \alpha + \beta_1 REL_{it} + \beta_2 Crisis_{it} + \beta_3 Crisis_{it} \times REL_{it} + \beta_4 LoanControl_{it} + \beta_5 FirmControl_{i,t-1} + \beta_6 LoanPurpose_{it}$ where *Spread* is the all-in-drawn loan spread over LIBOR in basis points. *REL* contains a set of variables to capture the banking relationship. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *REL(Number)* is calculated as the number of loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by borrower *i*'s total number of loans in the preceding 5 years. *REL(Amount)* is calculated as the total size of the loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by the total size of borrower *i*'s loans in the preceding 5 years. $REL(Number)^2$ and $REL(Amount)^2$ are the squares of *REL(Number)* and *REL(Amount)*, respectively. *Crisis* is a dummy variable that receives the value of one if the loan is borrowed in the period of 2008–2009, and zero otherwise. *LoanControl* denotes a set of loan characteristic variables as follows: *ln(Loan amount)* is calculated as the natural log of the total deal amount of a facility in millions of dollars, *ln(Maturity)* is computed as the natural log of the number of months to maturity, and *# of lead banks* measures the number of lead lenders for a facility. *FirmControl* refers to a set of borrowing firm characteristic variables as follows: *Investment grade* equals one if the S&P long term issuer credit rating indicates the investment grade prior to the borrowing, and zero otherwise, *FFO/Asset* is the ratio of funds from operations to book value of total assets prior to the borrowing, *STD(FFO)* is the standard deviation of *FFO* over the preceding 5 years, *M/B ratio* is the ratio of market value of total assets to book value of total assets prior to the borrowing, *Leverage* measures market leverage calculated as total debts over the sum of total debt and the market value of equity prior to the borrowing, and *Size* is measured by the natural log of the book value of total assets prior to the borrowing. *LoanPurpose* denotes loan purpose fixed effects

Table 7 Bond issuance spread in the years following a new syndicated loan

	REL(Dummy) = 1		*REL(Dummy)* = 0		Difference	
	N	Mean	N	Mean	Mean	*t* statistics
Panel (A) Bond Spread at Issuance in the Years Following a New Syndicated Loan						
Year 0	376	325.20	272	363.70	−38.50	−2.21**
Year 1	313	302.70	273	327.60	−24.90	−1.44
Year 2	312	342.80	261	330.00	12.80	0.77
Year 3	305	321.60	267	328.70	−7.10	−0.48
Panel (B) Bond Spread at Issuance in *Year 0* and *Year1*						
Issued Year: Whole Period	689	315.00	545	345.60	−30.60	−2.53**
Issue Year: Pre-Crisis	291	172.80	308	260.10	−87.30	−4.82***
Issue Year: During-Crisis	30	458.40	20	751.60	−293.20	−3.95***
Issue Year: Post-Crisis	368	415.80	217	429.50	−13.70	−1.74*

This table reports the pricing of new corporate bond offerings after REITs borrow new syndicated loans. Bond pricing is measured by the spread between yield to maturity and the U.S. 3-month T-bill rate at the issuance in basis points. *Year 0* is the year when a new syndicated loan is borrowed, and thus *Year 1* is one year after the new syndicated loan. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *Pre-Crisis* refers to the period of 1988–2007. *Post-Crisis* refers to the period of 2010–2015. *During-Crisis* refers to the period of 2008–2009. The information on syndicated loans is from the DealScan database. The information on corporate bond offerings is from the Bloomberg Terminal. Foreign bonds are excluded from the sample. "***", "**", and "*" represent 1%, 5%, and 10% significance levels, respectively

4.5 REIT banking relationships and cost of public capital

In addition to the cost of syndicated loans, we further examine whether banking relationships improve the cost of public capital in terms of bond issuances and equity offerings. Datta et al. (1999) suggest that banking relationships significantly reduce the initial public straight bond offering yield spreads by about 68 basis points for industrial firms. In addition, Schenone (2004) show that firms with a pre-IPO banking relationship with a prospective underwriter receive lower IPO underpricing. For whether a new syndicated loan affect the difference in cost of public capital between REITs with and without banking relationships deserve further investigation. REITs with banking relationships signal better firm quality and transparency to the market and are expected to bear lower funding costs.

Table 7 presents the bond issuance spread in the years following a new syndicated loan. The results in Panel A show that, compared to REITs without banking relationships, REITs with banking relationships pay 38.5 basis points lower in bond spreads in the year when a new syndicated loan is granted. Panel B indicates that the same results persist throughout all the examined periods, though the difference is extremely large during the crisis period (293.20 basis points lower for REITs with banking relationships) and narrows after the crisis (13.70 basis points lower).

Table 8 shows the results by regressing bond spread on the bond control variables as well as variables similar to those tested in Table 6 and show similar findings. During the non-crisis period, banking relationships help reduce the borrowing cost of public debt by around 33.99 basis points. The crisis period increases the borrowing cost for all REITs by 328.0 basis points, before banking relationships are taken into consideration. Banking relationships reduce this increase significantly, by 271.9 basis points, leaving an increase of 56.1 basis points for REITs with banking relationships during the crisis period. Overall,

Table 8 Regression of bond issuance spread on REIT banking relationships

	Dependent Variable: *Bondspread* in *Year 0* and *Year 1*		
	(1)	(2)	(3)
REL(Dummy)	−33.99*		
	(−1.70)		
REL(Number)		−140.1**	
		(−2.43)	
$REL(Number)^2$		126.3**	
		(2.36)	
REL(Amount)			−3.855
			(−0.05)
$REL(Amount)^2$			−96.60
			(−0.87)
Crisis	328.0***	280.9***	238.8***
	(4.44)	(3.38)	(2.99)
REL(Dummy) × *Crisis*	−271.9***		
	(−9.54)		
REL(Number) × *Crisis*		−257.5***	
		(−3.81)	
REL(Amount) × *Crisis*			−459.2***
			(−3.83)
Ln(Principle Amount)	53.19***	53.39***	51.39***
	(3.60)	(3.55)	(3.35)
Ln(Bond Maturity)	69.29*	68.31*	65.62*
	(1.86)	(1.83)	(1.72)
Bond Invt Rating	−89.96*	−90.25*	−91.56**
	(−1.98)	(−1.98)	(−2.05)
M/B ratio	−121.1*	−127.6*	−131.4*
	(−1.78)	(−1.80)	(−1.89)
FFO/Asset	1294.5	1364.9	1371.1
	(1.12)	(1.17)	(1.18)
Intercept	64.51	65.29	80.61
	(0.51)	(0.50)	(0.60)
Observations	1232	1232	1232
Adj. R^2	0.181	0.174	0.176
AIC	16,454	16,467	16,518
BIC	16,500	16,518	16,514

***Significant at 1%; **significant at 5%; *significant at 10%. T-statistics in parentheses

$Bondspread_{it} = \alpha + \beta_1 REL_{it} + \beta_2 Crisis_{it} + \beta_3 Crisis_{it} \times REL_{it} + \beta_4 BondControl_{it} + \beta_5 FirmControl_{i,t-1}$ This table reports the regression of new corporate bond pricing after a REIT borrows a new syndicated loan. The sample contains the bond issuance in *Year 0* and *Year 1*. *Year 0* is the year when a new syndicated loan is borrowed, and thus *Year 1* is one year after the new bank loan. *Bondspread* is measured by the bond issuance spread between yield to maturity and the U.S. 3-month T-bill rate in basis points. *REL* contains a set of variables to capture the banking relationship. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *REL(Number)* is calculated as the number of loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by borrower *i*'s total number of loans in the preceding 5 years. *REL(Amount)* is

Table 8 (continued)

calculated as the total size of the loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by the total size of borrower *i*'s loans in the preceding 5 years. *REL(Number)*^{2} and *REL(Amount)*^{2} are the squares of *REL(Number)* and *REL(Amount)*, respectively. *Crisis* is a dummy variable that receives the value of one if the bond is issued in the period of 2008–2009, and zero otherwise. *BondControl* is a set of bond characteristic variables as follows: *Ln*(*Principle Amount)* is calculated as the natural log of the issue amount, *Ln(Bond Maturity)* is the natural log of corporate bond maturity, *Bond Invt Rating* is a dummy variable that receives the value of one if the S&P initial bond rating is investment grade, and zero otherwise. *FirmControl* is a set of issuing firm characteristic variables as follows: *M/B ratio* is the ratio of market value of total assets to book value of total assets prior to the issuance, *FFO/Asset* is the ratio of funds from operations to book value of total assets prior to the issuance. The information of syndicated loans is from DealScan. The information of corporate bond offerings is from Bloomberg Terminal. Foreign bonds are excluded from the sample

the evidence proves that banking relationships are very helpful in reducing bondholders' required rate of return, especially during crisis periods. In addition, bond spreads decrease by about 90 basis points for investment grade rating bonds.

We further examine the underpricing of SEOs after a REIT borrows a new syndicated loan. REITs with banking relationships are expected to be more transparent and be able to mitigate underpricing caused by asymmetric information. Panel A in Table 9 indicates that the underpricing for REITs without banking relationships is significantly larger than REITs with banking relationships in the year a new syndicated loan is offered as well as in the following year. The difference exists for the whole sample period as well as for just during the crisis, as shown in Panel B. We further test the regression of underpricing on banking relationships in Table 10. The evidence shows that banking relationships help enhance pricing accuracy and lower the underpricing of equity offerings during the crisis period. However, significant spread differences between REITs with and without banking relationships are not observed either before or after the crisis. During the crisis period, the degree of underpricing for REITs with banking relationships is significantly lower (13.2%) compared to REITs without banking relationships. Overall, the evidence shows that banking relationships help reduce equity underpricing. In addition, REITs with higher stock volatility are riskier and are offered at a lower price and end up with a greater underpricing.

5 Conclusions

The evolution of REIT capital structures is an interesting issue, given access to capital markets is a critical decision for a REIT to grow. REITs are forced to access external capital markets more frequently than industrial firms since they pay out most of their earnings as dividends. Among the various capital sources, bank debt is a major channel and is increasingly favored by REITs, where syndicated loans are the most popular type applied. The ratio of syndicated loans to overall capital sources increases from only 8.94% ($85 million) in year 1989 to 45.00% ($44 billion) in year 2015. Previous literature on REIT financing sources largely focuses on public debt and equity offerings. There are very few studies on bank debt or syndicated loans, and most of them focus on REITs' lines of credit. We investigate REITs' syndicated loan costs and how REIT banking relationships affect the cost of capital before, during, and after the 2008–2009 financial crisis. In addition, we examine

Table 9 SEO underpricing in the years following a new syndicated loan

	REL(Dummy) = 1		*REL(Dummy)* = 0		Difference	
	N	Mean	N	Mean	Mean	*t* statistics
Panel (A) SEO Underpricing in the Years Following a New Syndicated Loan						
Year 0						
R_0	594	−2.63%	532	−2.20%	−0.43%	−0.48
R_1	594	1.97%	532	3.86%	−1.89%	−1.99**
Year 1						
R_0	489	−2.82%	477	−3.88%	1.06%	2.20**
R_1	489	2.87%	477	4.66%	−1.79%	−1.69*
Panel (B) SEO Underpricing in *Year 0* and *Year 1*						
Issue Year: Whole Period						
R_0	1,083	−0.03%	1,009	−0.03%	0.00%	0.55
R_1	1,083	0.02%	1,009	0.04%	−0.02%	−2.64***
Issue Year: Pre-Crisis						
R_0	345	−0.02%	446	−0.02%	0.00%	−0.24
R_1	345	0.02%	446	0.02%	0.00%	−0.43
Issue Year: During-Crisis						
R_0	52	−0.13%	67	−0.21%	0.08%	1.97*
R_1	52	0.21%	67	0.43%	−0.22%	−2.23**
Issue Year: Post-Crisis						
R_0	686	−0.02%	496	−0.02%	−0.01%	−0.92
R_1	686	0.01%	496	0.01%	0.00%	0.24

This table reports the underpricing of seasoned equity offerings (SEOs) after a REIT borrows a new syndicated loan. The degree of underpricing is measured by R_0 and R_1. By Ghosh et al. (2000), R_0 is the return on pre-offer day closing price to offer price. R_1 is the return on equity offer price to offer day closing price. *Year 0* is the year when a new syndicated loan is borrowed, and thus *Year 1* is one year after the bank loan. *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise. *PreCrisis* is a dummy variable that receives the value of one if the equity is issued in the period of 1988–2007, and zero otherwise. *PostCrisis* is a dummy variable that receives the value of one if the equity is issued in the period of 2010–2015, and zero otherwise. *During-Crisis* is a dummy variable that receives the value of one if the equity is issued in the period of 2008–2009, and zero otherwise. The information on syndicated loans is from the DealScan database. The information on SEOs is from the SDC Global New Issues database and the CRSP Ziman Real Estate Database. "***", "**", and "*" represent 1%, 5%, and 10% significance levels, respectively

whether a new syndicated loan affects the cost of the following bond issuance and equity offering for REITs with banking relationships.

Our results show that REITs derive significant benefits from banking relationships. REITs with banking relationships have significantly lower spreads during the sample period as a whole and for all types of syndicated loans. This lower spread is also found for the periods before, during, and after the subprime crisis, individually. The results show that REITs with banking relationships obtain larger loan amounts and longer loan terms and are less required to offer collateral. More lenders and more lead banks are willing to participate in relationship loans and lead banks retain smaller shares.

Table 10 Regression of SEO underpricing on REIT banking relationships

	Dependent Variable: R_1		
	(1)	(2)	(3)
REL(Dummy)	−0.132*		
	(−1.89)		
REL(Number)		−0.00875	
		(−0.08)	
$REL(Number)^2$		0.103	
		(1.20)	
REL(Amount)			−0.288*
			(−1.87)
$REL(Amount)^2$			0.0469
			(0.86)
PreCrisis	−0.0206	0.0605	0.0218
	(−0.53)	(1.64)	(0.58)
PostCrisis	−0.00447	0.0711	0.0358
	(−0.10)	(1.55)	(0.75)
REL(Dummy) × *PreCrisis*	0.136*		
	(1.88)		
REL(Dummy) × *PostCrisis*	0.123**		
	(2.10)		
REL(Number) × *PreCrisis*		−0.0814	
		(−1.55)	
REL(Number) × *PostCrisis*		−0.0926*	
		(−1.95)	
REL(Amount) × *PreCrisis*			0.254**
			(2.13)
REL(Amount) × *PostCrisis*			0.221**
			(2.39)
Ln(Principle Amount)		0.00409	0.00459
		(0.28)	(0.31)
Relative Shr Amount	0.145	0.138	0.138
	(1.10)	(1.01)	(1.00)
1/ stock price	−0.503	−0.430	−0.505
	(−1.55)	(−1.42)	(−1.57)
Ln(Mkt Cap)	0.0115	0.0110	0.00794
	(1.07)	(0.73)	(0.54)
Stk Volatility	5.896*	5.533*	5.922*
	(1.82)	(1.75)	(1.80)
Intercept	−0.123	−0.211	−0.158
	(−0.95)	(−1.44)	(−1.16)
Observations	2092	2092	2092
Adj. R^2	0.300	0.303	0.297
AIC	−2538	−2544	−2527
BIC	−2482	−2477	−2459

Table 10 (continued)

$R_{1,it} = \alpha + \beta_1 REL_{it} + \beta_2 PreCrisis_{it} + \beta_3 PostCrisis_{it} + \beta_4 PreCrisis_{it} \times REL_{it} + \beta_5 PostCrisis_{it} \times REL_{it} + \beta_6 Control_{it}$

This table reports the regression of the degree of underpricing in seasoned equity offerings (SEOs) after a REIT borrows a new syndicated loan. The sample contains the equity issuance in *Year 0* and *Year 1*. *Year 0* is the year when a new syndicated loan is borrowed, and thus *Year 1* is one year after the new bank loan. The degree of underpricing is measured by R_1, the return on equity offer price to offer day closing price. *REL* contains a set of variables to capture the banking relationship: *REL(Dummy)* is a dummy variable that receives the value of one if a REIT borrows from the same lead bank in the preceding 5 years, and zero otherwise, *REL(Number)* is calculated as the number of loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by borrower *i*'s total number of loans in the preceding 5 years, and *REL(Amount)* is calculated as the total size of the loans provided by the same lead bank(s) to borrower *i* in the preceding 5 years divided by the total size of borrower *i*'s loans in the preceding 5 years; $REL(Number)^2$ and $REL(Amount)^2$ are the squares of *REL(Number)* and *REL(Amount)*, respectively. *PreCrisis* is a dummy variable that receives the value of one if the equity is issued in the period of 1988–2007, and zero otherwise. *PostCrisis* is a dummy variable that receives the value of one if the equity is issued in the period of 2010–2015, and zero otherwise. *Control* is a set of control variables as follows: *Ln*(*Principle Amount)* is the natural log of the issue amount, *Relative Shr Amount* is the number of shares offered divided by the total number of shares outstanding, *1/ stock price* is one divided by the closing price five days before the offer day, *Ln(Mkt Cap)* is the natural log of market capitalization on the offer day, *Stk Volatility* is the standard deviation of 30 daily returns ending at 11 days prior to the offer. The information of syndicated loans is from DealScan. The information on SEOs is obtained from SDC. Daily stock prices and number of shares outstanding are retrieved from CRSP

***Significant at 1%; **significant at 5%; *significant at 10%. T−statistics in parentheses

After considering loan contract control variables and REIT specific control variables, for the whole sample, banking relationships result in a lowering of syndicated loan spreads by 13.53 basis points; the spread difference increases to 23.53 basis points and 23.78 basis points when the two banking relationship strength proxies, *REL(Number)* and *REL(Amount)*, are applied. We also find that during the subprime crisis, the spread is increased by 103.1 basis points or 103.8 basis points depending on which banking relationship proxy is applied. Post crisis, the spread difference narrows, decreasing by only 52.72 basis points when *REL(Dummy)* is used or around 54 basis points when the two banking relationship strength proxies are applied.

Our evidence further shows that during the non-crisis period, REITs with banking relationships pay significantly lower spreads (8.996 basis points) to the lending banks. We find that the financial crisis increases the borrowing cost for REITs with banking relationships by 59.36 basis points, while it increases by 95.92 basis points for REITs without banking relationships. In summary, banking relationships offer significant benefits in lowering bank borrowing costs, especially during the subprime crisis.

In addition to the cost of syndicated loans, our results also provide evidence of reduced bond spreads and SEO underpricing after the granting of a new syndicated loan. During the non-crisis periods, banking relationships help reduce the borrowing cost of public debt by around 34.00 basis points. For REITs with banking relationships, the crisis increases the bond spread by only 56.10 basis points, whereas the increase in bond spread due to the crisis is 328 basis points for REITs without banking relationships. Overall, the evidence shows that banking relationships are very helpful in reducing bondholders' required rate of return, especially during the crisis period. The evidence also shows that during the crisis period, the degree of SEO underpricing for REITs with prior banking relationships is significantly lowered (13.20%) compared to REITs without banking relationships.

Although our sample period is only up to 2015, the findings should still be relevant up to the current market. Referring to the most updated study by Dahiya et al. (2022), they

find the banking relationship proxies by REL(Dummy), REL(Number), and REL(Amount) for 5,811 companies up to the year 2019 are 0.562, 0.437, and 0.421, respectively, which are higher than what we estimate for industrial firms, 0.391, 0.246, and 0.157, up to the year 2015. In addition, the overall syndicated loan size has doubled from $1.3 trillion in 2015 to $2.4 trillion in 2019. The REIT industry is very stable in terms of company numbers. There are 182 equity REITs in 2015 while the number is 179 in 2019, though the market capitalization increases from $886.5 billion to $1.246 trillion. This evidence indicates that syndicated loans and banking relationships continue to grow and become more and more important.

Overall, our empirical results support our hypothesis that banking relationships benefit REITs as they experience lower borrowing costs, and that this benefit exists for credit lines as well as for term loans. Relationship loans are always less expensive, even when an economic shock occurs, though banks adjust the spread upward during the crisis period. Finally, banking relationships also lead to lower bond yields for REITs and improve equity pricing accuracy after syndicated loans are obtained.

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